



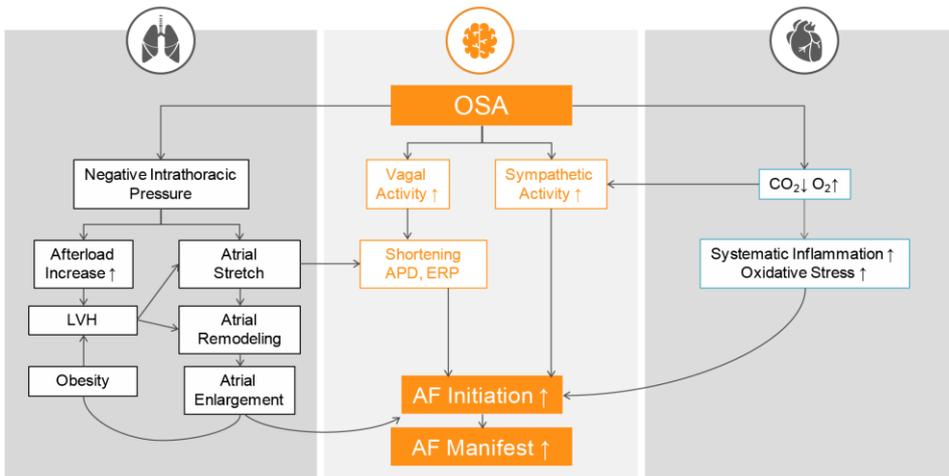
Sleep Apnea Detection. Arrhythmia Detection.

All in One.

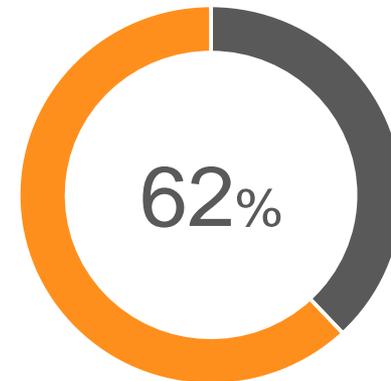
SPIDER SAS POLYGRAPH HOLTER

THE STRONG LINK BETWEEN OSA & AF

MECHANISMS CONTRIBUTING TO AF IN OSA¹



PAROXYSMAL OR PERSISTENT AF



Overall, **OSA patients have 4-fold-higher risk of AF.**²

There is a strong link between arrhythmia and sleep apnea

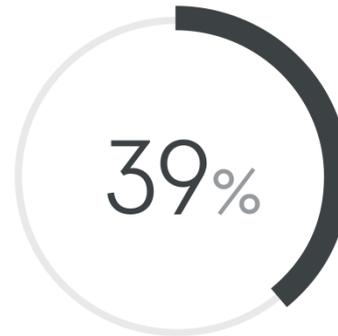
62% of patients with paroxysmal / persistent AF **have OSA.**³

1. Ling Zhang, Obstructive Sleep Apnoea and Atrial Fibrillation, Arrhythmia & Electrophysiology, 2015; 4 (1):14-8
2. Mehra R et al. Am J Respir Crit Care Med Vol 173. pp 910–916, 2006
3. Stevenson IH, Teichtahl H, Cunningham D, Ciavarella S, Gordon I, Kalman JM. Prevalence of sleep disordered breathing in paroxysmal and persistent atrial fibrillation patients with normal left ventricular function. Eur Heart J 2008;29:1662–9

TREATING OSA IMPROVES AF THERAPY SUCCESS

RESPONSE RATES TO ANTI-ARRHYTHMIC DRUGS (AAD)²

AF Patients with
Severe OSA



AF Patients with
Non-severe OSA



AF patients with severe OSA are less likely to respond to anti-arrhythmic drugs than patients with non-severe OSA: 39% vs. 70%^{1,2}

TREATING OSA IMPROVES RESPONSE TO AF MEDICATION

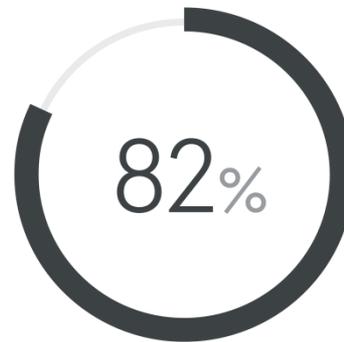
TREATING OSA IMPROVES AF THERAPY SUCCESS OVERALL

AF RECURRENCE AT 12 MONTHS UNTREATED OSA VS. TREATED OSA

- After cardioversion, treating OSA reduces AF recurrence by almost 50%.¹
- AF patients with untreated OSA have a 55% risk of AF recurrence after ablation compared to 28% for those treated with CPAP.²

AFTER CARDIOVERSION

Untreated OSA



Treated OSA



AFTER ABLATION

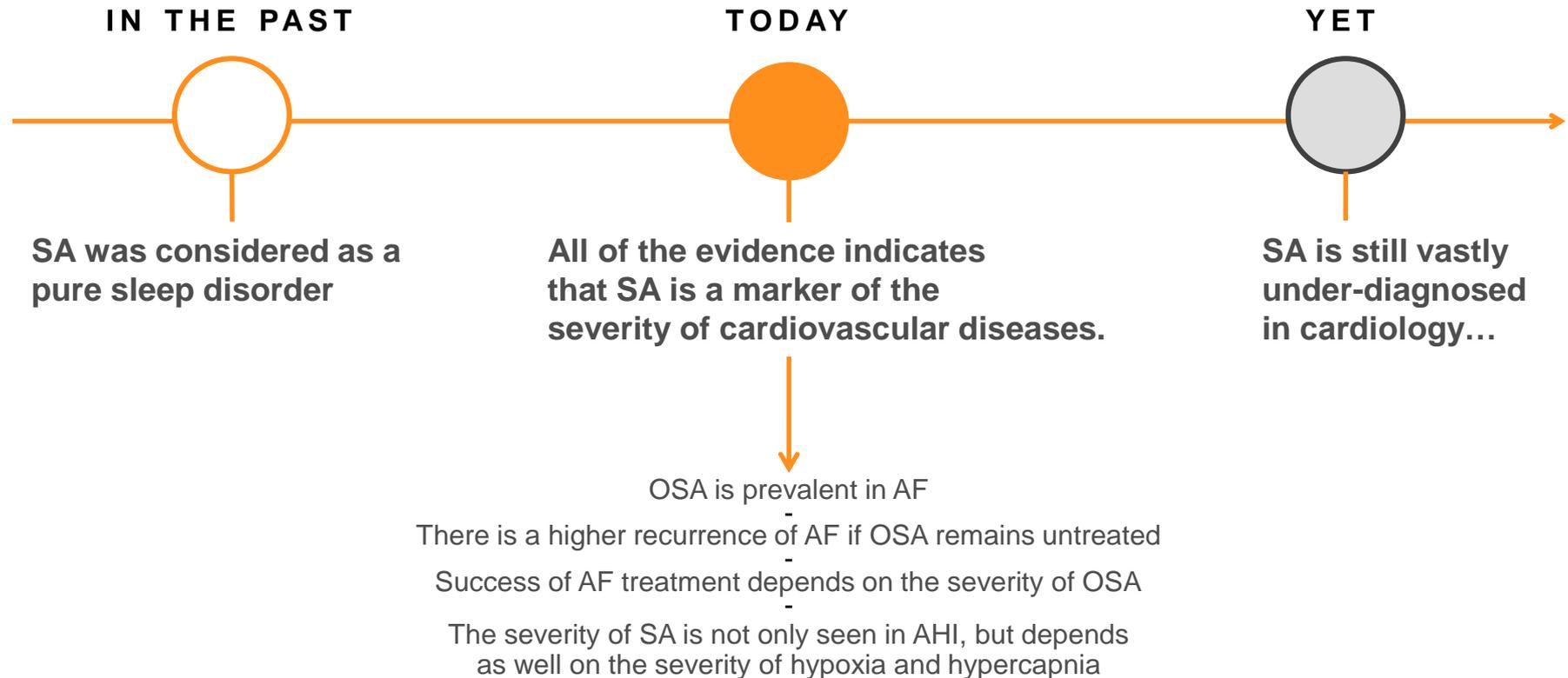
Untreated OSA



Treated OSA



WHAT HAVE WE LEARNED SO FAR?



There is an urgent need to provide cardiologists with a full set of solutions to address the matter, in collaboration with sleep specialists

1 DEVICE 2 PROCEDURES

SLEEP APNEA DETECTION

- Respiratory Polygraph Cat III
- 1 or 2 nights recording

ARRHYTHMIA DETECTION

- Up to 32h hours recording
- 2 ECG channels

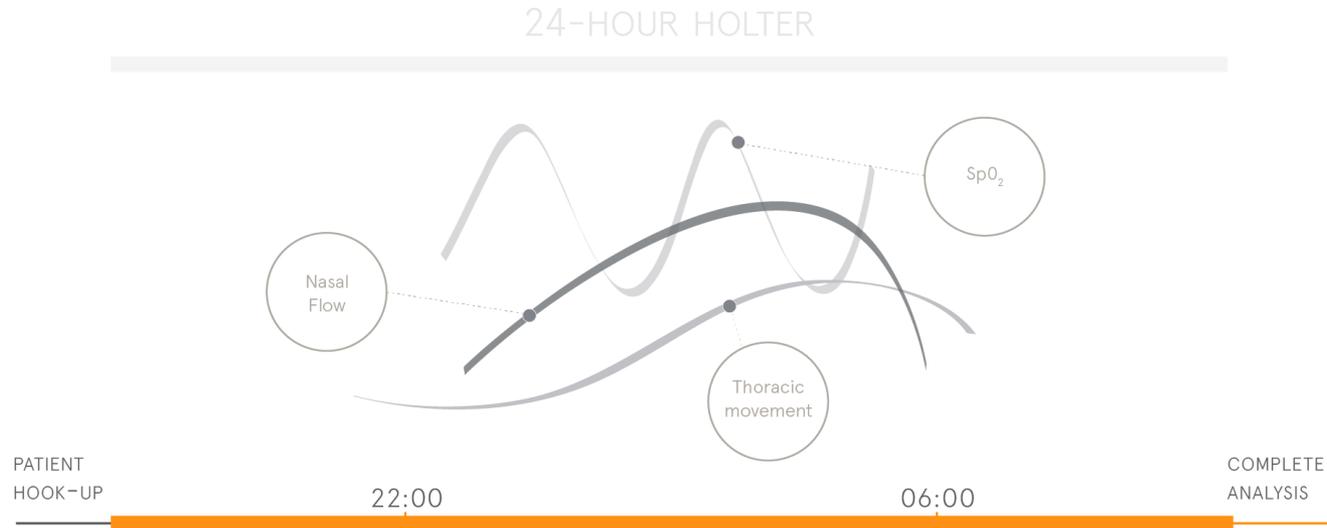


All in One

All of Microport's know-how in Holter technology is built into Spider SAS.

ALL IN ONE

ALL OF MICROPORT'S KNOW-HOW IN HOLTER TECHNOLOGY IS BUILT INTO SPIDER SAS



Polygraph Report



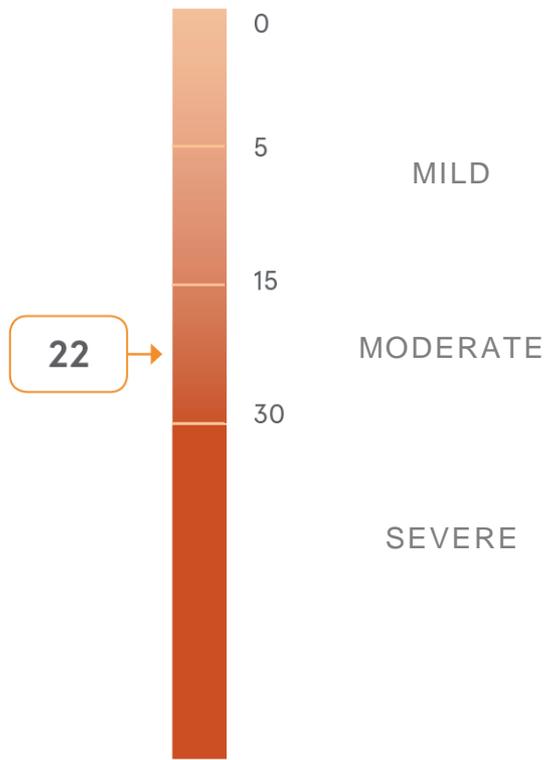
Holter Report

POLYGRAPH

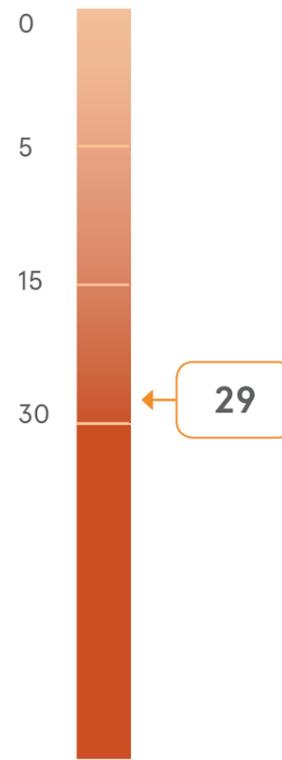
SLEEP APNEA DIAGNOSIS IN YOUR HANDS



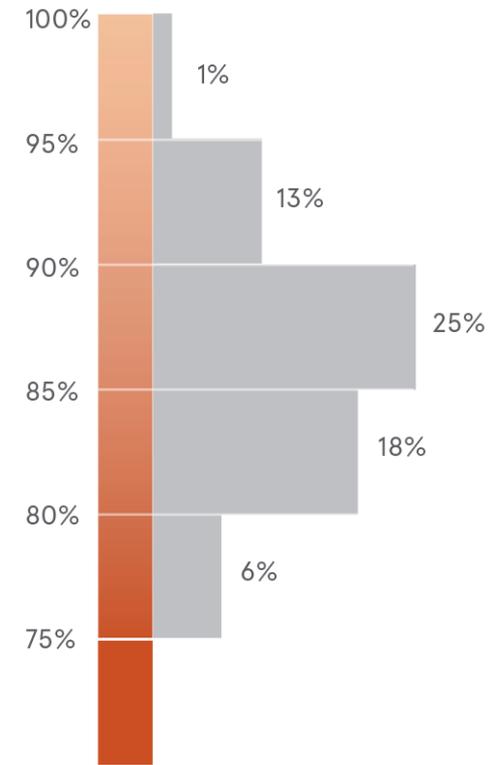
AHI*
Apnea/Hypopnea Index



ODI
Oxygen Desaturation Index



SpO₂ burden



DUAL DISPLAY

A POWERFUL DIAGNOSTIC TOOL

Is sleep apnea the underlying trigger of my patient's AF?



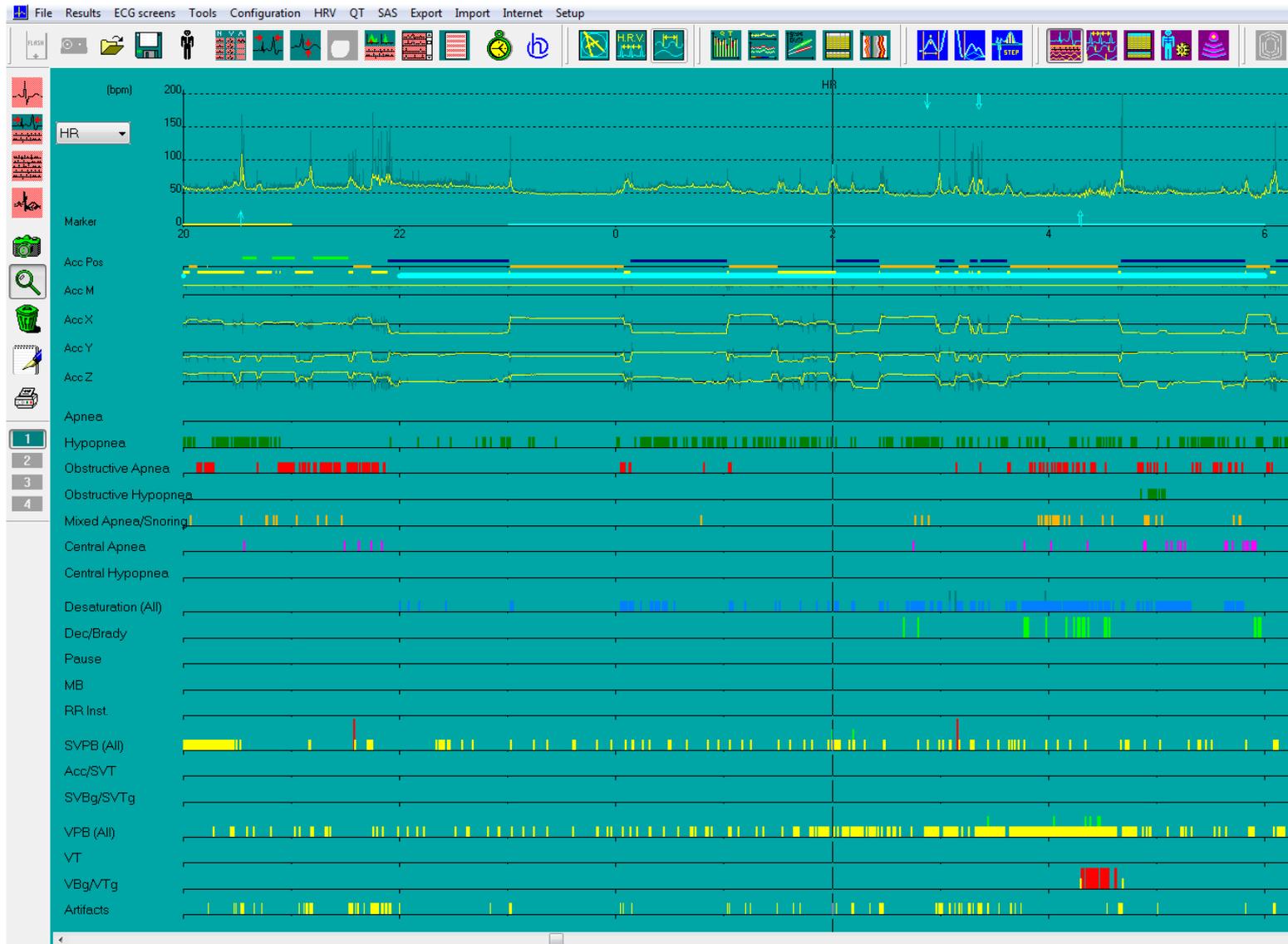
DUAL DISPLAY

A POWERFUL DIAGNOSTIC TOOL



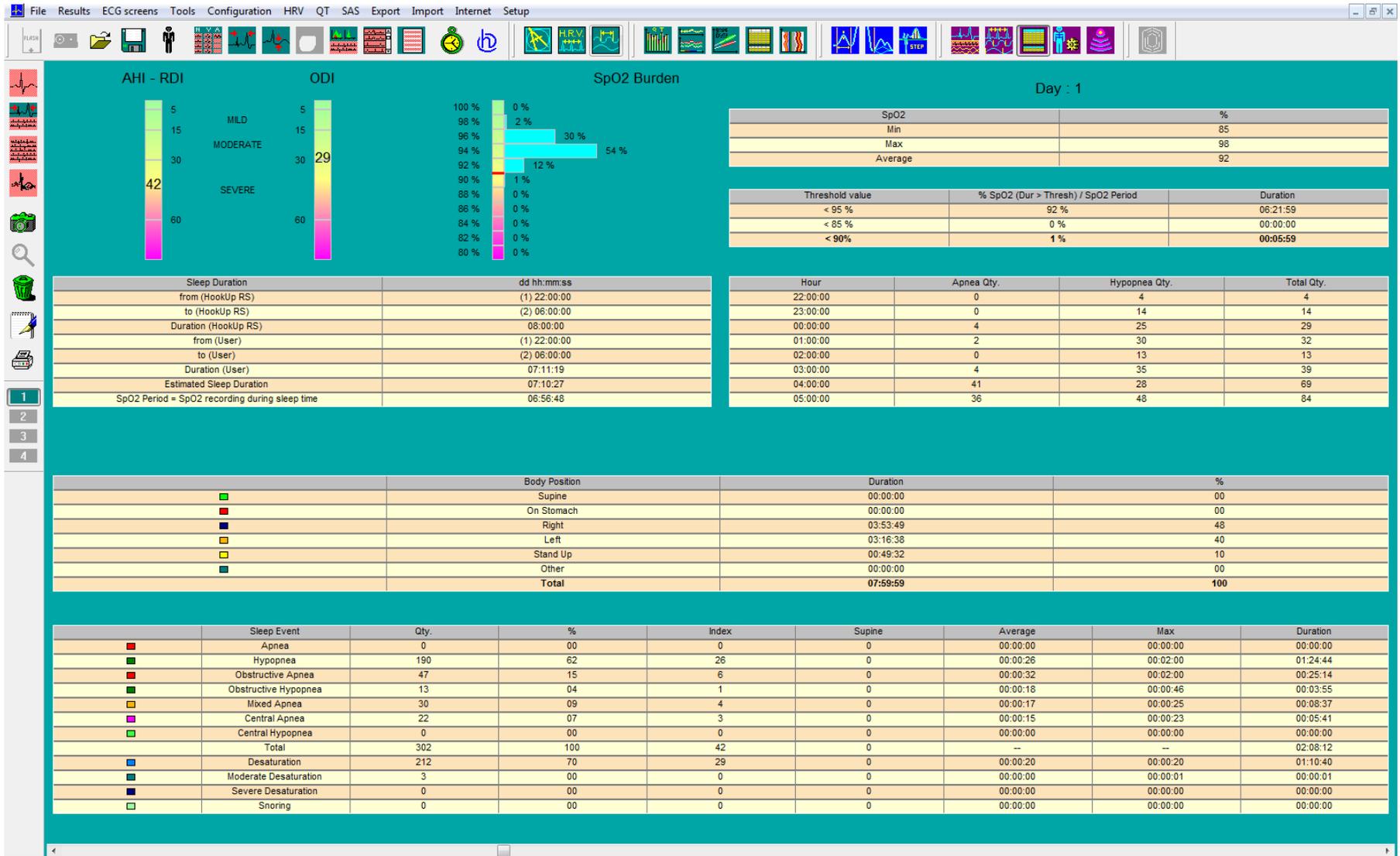
DUAL DISPLAY

ALL TRENDS AT A GLANCE



SPIDER SAS

COMPREHENSIVE REPORTING



SPIDER SAS

COMPREHENSIVE REPORTING

BRB V
Sleep Apnea - Polygraph Report
14/03/2018

Day : 1

Patient Name : BRB V
 First Name :
 ID number :
 Visit number :
 Hook up date : 14/03/2018 at 16:43
 Night : (1) 22:00:00
 Day : (2) 06:00:00

Indication(s) : recherche d'apnée

Analyzed by : dr x

COMMENTS : apnée modérée

Apnea & Hypopnea

AHI - RDI	Qty.	Average(s)
Supine	0/h	
Hypopnea	203	00:00:26
Apnea	99	00:00:23
Obstructive Apnea	47	00:00:32
Central Apnea	22	00:00:15
Mixed Apnea	30	00:00:17

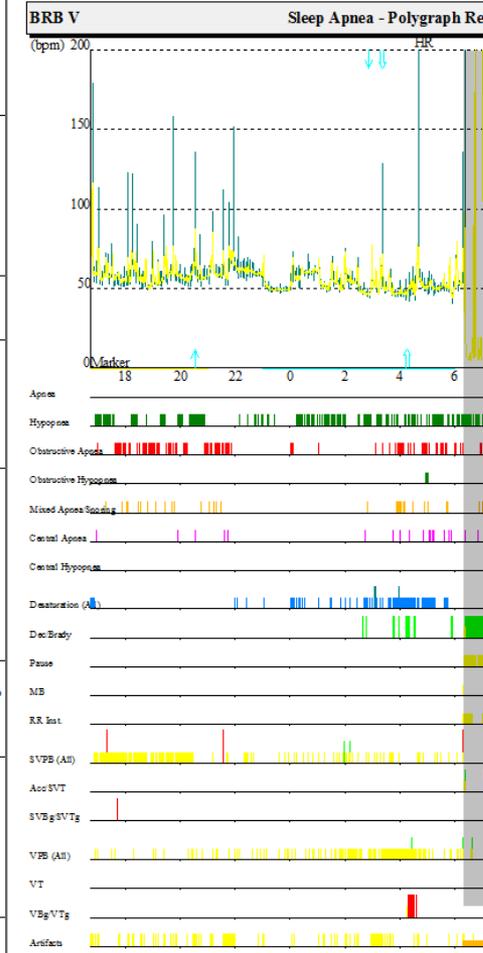
SpO2 Burden

Average	< 95%	< 92%
: 1%	< 95%	: 92%
ODI : 29 / h	< 85%	: 0%
	< 90%	: 1%

Setup

SpO2 Threshold (%) : : 90 %
 ODI (%) : : 3 %
 Minimum duration (sec) : : 3 s
 Maximum duration (sec) : : 20 s
 Minimum saturation (%) : : 70 %

RECORDER SN : SW1611040 1.00B



BRB V
Sleep Apnea - Polygraph Report
14/03/2018

Day : 1

AHI - RDI **ODI** **SpO2 Burden**

SpO2	%
Min	85
Max	98
Average	92

Threshold value	% SpO2 (Dur > Thresh)	SpO2 Period	Duration
< 95%	92 %		06:21:59
< 85%	0 %		00:00:00
< 90%	1 %		00:05:59

Sleep Duration	60 Minutes	Hour	Apnea Qty.	Hypopnea Qty.	Total Qty.
from (HookUp R.S)	(1) 22:00:00	22:00:00	0	4	4
to (HookUp R.S)	(2) 06:00:00	23:00:00	0	14	14
Duration (HookUp R.S)	08:00:00	00:00:00	4	25	29
from (User)	(1) 22:00:00	01:00:00	2	30	32
to (User)	(2) 06:00:00	02:00:00	0	13	13
Duration (User)	07:11:19	03:00:00	4	35	39
Estimated Sleep Duration	07:10:27	04:00:00	41	28	69
SpO2 Period = SpO2 recording during sleep time	06:56:48	05:00:00	36	48	84

Body Position	Duration	%
Supine	00:00:00	00
On Stomach	00:00:00	00
Right	03:53:49	48
Left	03:16:38	40
Stand Up	00:49:32	10
Other	00:00:00	00
Total	07:59:59	100

Sleep Event	Qty.	%	Index	Supine	Average	Max	Duration
Apnea	0	00	0	0	00:00:00	00:00:00	00:00:00
Hypopnea	190	62	16	0	00:00:26	00:02:00	01:24:44
Obstructive Apnea	47	15	6	0	00:00:32	00:02:00	00:25:34
Obstructive Hypopnea	13	04	1	0	00:00:18	00:00:46	00:05:35
Mixed Apnea	30	09	4	0	00:00:17	00:00:25	00:08:37
Central Apnea	22	07	3	0	00:00:15	00:00:23	00:05:41
Central Hypopnea	0	00	0	0	00:00:00	00:00:00	00:00:00
Total	302	100	42	0	--	--	02:08:12
Desaturation	212	70	29	0	00:00:20	00:00:20	01:10:40
Moderate Desaturation	3	00	0	0	00:00:00	00:00:01	00:00:01
Severe Desaturation	0	00	0	0	00:00:00	00:00:00	00:00:00
Scoring	0	00	0	0	00:00:00	00:00:00	00:00:00

DUAL DISPLAY

DUAL ANALYSIS BENEFITS

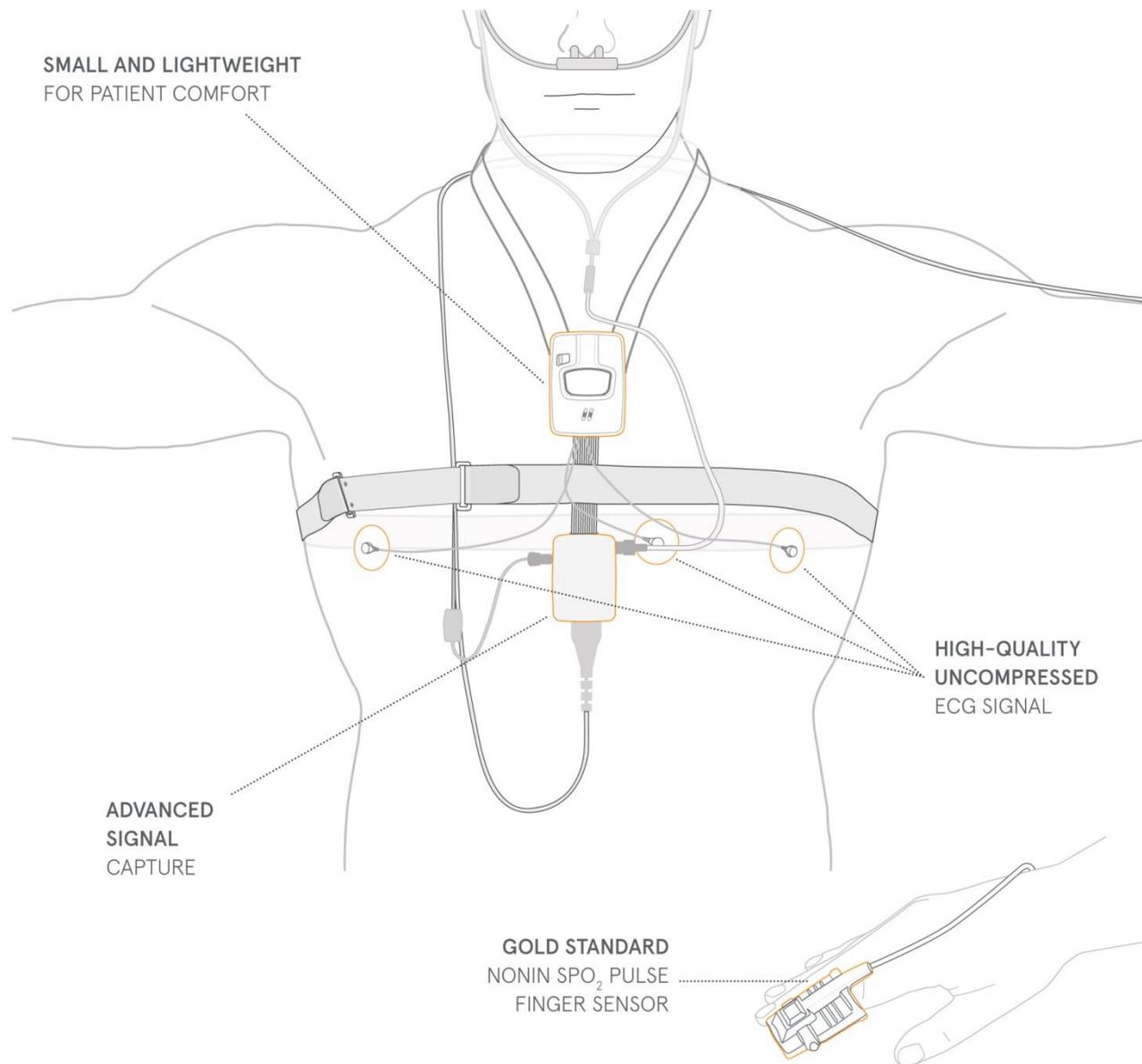
- ECG and respiratory signals combined and synchronized
- Fully customizable analysis interface
- Easily identify the underlying trigger: Apnea or Arrhythmia
- Identify oxygen desaturation during arrhythmia
- Gain insight into tolerance of apnea in parallel with cardiovascular events
- Help manage sleep apnea
- Provide the most tailored treatment path for patients

FULLY CUSTOMIZABLE REPORTS

- Automatic reports combined with a full suite of editing tools
- Two polygraph reports, one report per night
- 24 hr Holter Report

ONE CONVENIENT SOLUTION

STATE-OF-THE-ART TECHNOLOGY AT YOUR FINGERTIPS



ONE CONVENIENT SOLUTION

STATE-OF-THE-ART TECHNOLOGY AT YOUR FINGERTIPS

INTUITIVE HOOK UP

- Wireless bluetooth set up
- Step by step wizard for quick and easy hook-up
- Real-time signal for accurate positioning of sensors

COMPREHENSIVE REPORTING

- Simultaneous visualization of respiratory and arrhythmia events
- Automatic reports and full suite of editing tools
- AHI and SpO₂ analysis per night
- ECG Holter analysis - Identification of 18 different types of arrhythmia



Spider SAS is not available for sale or distribution in the USA.
Refer to user manual furnished with the device for complete instructions for use.
Manufactured for MicroPort CRM Italia S.r.l.,
Via Crescentino S.N., 13040 Saluggia (VC), Italy